Corner 'EU Life Cycle Policy and Support'

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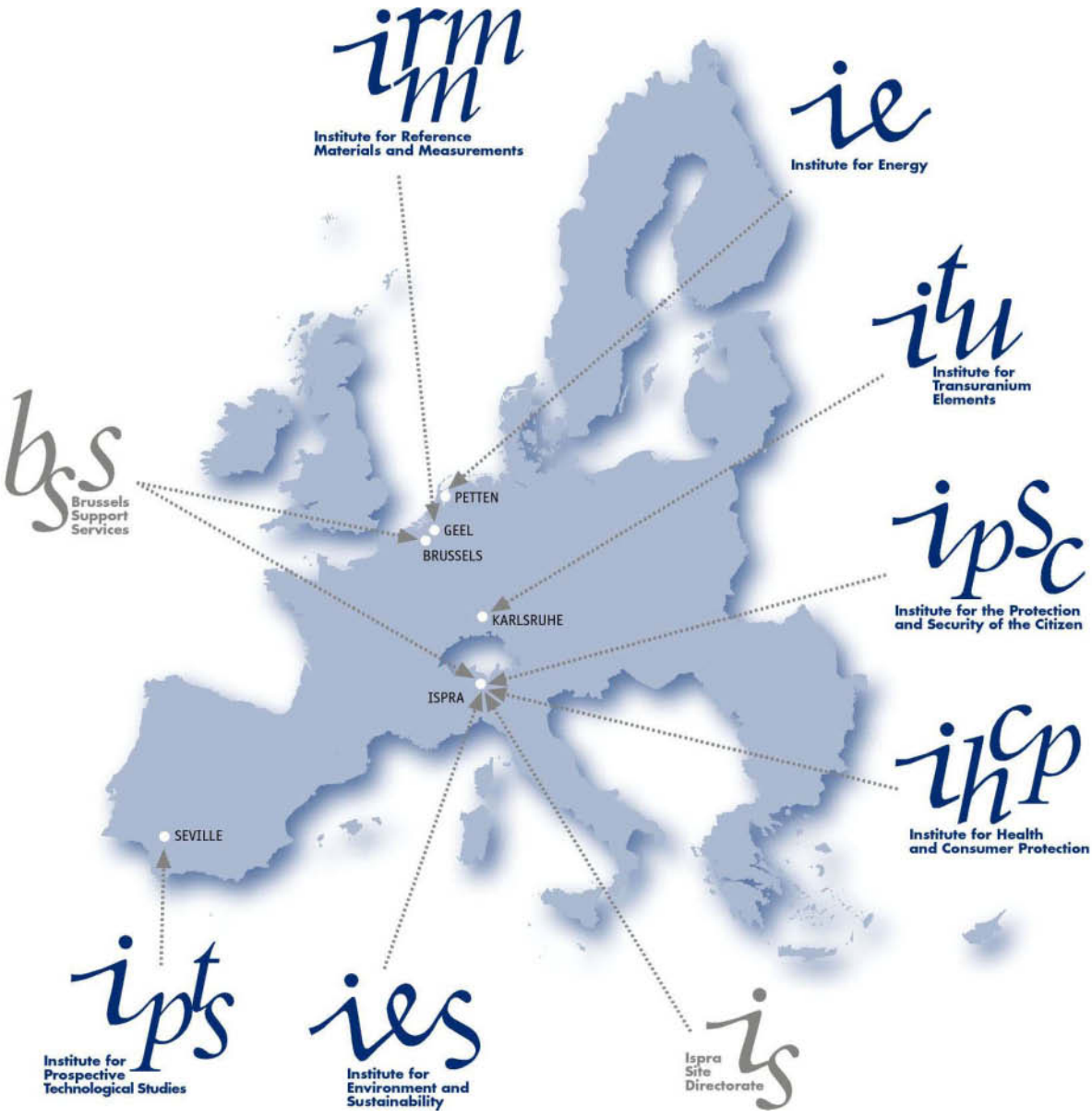
Map of the 7 Institutes of the European Commission's Joint Research Centre (JRC) in 5 of the European Union's 27 Member States.



* Dr. David W. Pennington is responsible for the Environmental Assessment of Waste and the Sustainable Management of Natural Resources (ENSURE) in the European Commission's Joint Research Centre (JRC), based at the Institute for Environment and Sustainability in Ispra, Italy. ENSURE complements conventional methods for waste and resource management with the development of recommended approaches, indicators, reference data, and case studies that facilitate life cycle thinking in European business and public administrations. The ENSURE team, consisting of about 15 staffs, provides independent support through computer simulations, modelling, expert workshops, and state-of-the-art laboratories. The responsibilities include the implementation of the European Platform on LCA, which is developing the Reference European Life Cycle Data System (ELCD) and associated Technical Guidance Documents. The team has successfully conducted a series of international workshops and carried out pilot studies with Member States in relation to Life Cycle Thinking and Waste Management. Activities now include the development of European Life-Cycle Guidelines for Waste Management, and the broader development of Life Cycle-based Sustainability Indicators.

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Life Cycle Assessment in the European Seventh Framework Programme for Research (2007–2013)

Andrea Tilche and Michele Galatola*

Environmental Technologies and Pollution Prevention Unit, Directorate General (DG) for Research, European Commission, Brussels

* **Corresponding author** (michele.galatola@ec.europa.eu)

The European Framework Programme for Research (FP) represents the main financial instrument used by the European Union to fund research and development activities, both in Europe but also all over the world. The Seventh Framework Programme (FP7) supports a wide range of participants: universities, public authorities, small enterprises, researchers in developing countries, and others. Launched in December 2006, FP7 will support research projects with more than € 54 Billion in the 2007–2013 period. FP7 Work Programmes cover all possible fields of science, from health to nanomaterials and from environment to security and space[1].

A careful analysis of the number, budget and typology of Life Cycle Assessment (LCA)-related projects funded in the last couple of years suggests that the role of LCA studies in European research is evolving quite rapidly. Research in LCA has mainly been funded in the past in direct support to the growth of the LCA community through projects such as LCANET[2], CHAINET[3], CASCADE[4], and OMNIITOX[5]. Complementing these, in 2006, 1.4 Million Euro was assigned to a consortium of top-level institutions to fund the strategic LCA project, CALCAS: Co-ordination Action for innovation in Life-Cycle Analysis for Sustainability[6]. The outcomes of CALCAS will further contribute to ongoing activities into how Life Cycle concepts can best be used in assessments in industry and public administrations as well as a contributing to define relevant research issues to be funded in the coming years.

LCA has also already been successfully used in a number of FP7 research projects as an environmental assessment tool to e.g. help evaluate the potential impacts linked to new technologies and/or products[7]. In the first two FP7 calls-for-proposal, the explicit reference to environmental, economic or social life cycle issues appeared in 29 calls: six for the Food, Agriculture and Biotechnology theme, one for the Information and Communication Technology theme, six for the Nanosciences, Nanotechnologies, Materials and New Production Technologies theme, one for the Energy theme, eight for the Environment theme and seven for the Transport theme. In addition, it has even been decided to introduce a specific requirement related to climate change issues in the Transport theme. Any proposals submitted to this research theme will have to demonstrate at least a neutral impact in terms of climate change and provide supporting evidence via a broader life cycle approaches.

Another indication of the growing recognition and use of LCA is in the decision to introduce the necessity to perform ISO 14040 compliant Life Cycle Assessments, life cycle costing studies and social life cycle assessments as mandatory requirements in many FP7 projects related to the development of environmental technologies. Moreover, all the environmental LCA data resulting from real case studies will be made available in compliance with at least the documentation and quality requirements of the European Reference Life Cycle Data System (ELCD). These requirements help to ensure that data, both for LCI as well as LCIA, and overall studies from European funded research projects will be more widely available in a consistent and appropriately documented manner.

Future FP7 calls will address several LCA research needs. These may include funding research activities on improved impact assessment methods (e.g. human toxicology in relation to nanotechnology-based products, biodiversity, water use, etc), exploring the possibility of developing deeper and broader ways of performing LCA studies, and developing an overall methodology and specific methods and tools for the Sustainability Assessment of existing and future Technologies.

The Sustainability Assessment of Technologies (SAT) is of key importance, as sustainability is increasingly at the very centre of most political and industrial decisions[8]. In order to assess emerging/novel technologies in all kinds of areas, including bio-refineries, second generation biofuels, advanced fuel cells, nanotechnology-based products, etc in terms of the 3 pillars (environmental, economic, social), a Life Cycle Approach is necessary to help avoid any form of burden-shifting, especially when taking 'system-level' decisions. These assessments should be performed using a set of coherent rules in relation to system boundaries, quality of data, timeframe, and operative methods. It is obvious that the transparency of this assessment process and the inclusion of participatory approaches are of key importance. To contribute resolving some of these challenges, the call of FP7 published in November 2007 includes a specific research topic on this issue[9].
The different research communities, the private sector, and public bodies are all recognizing, more and more, the necessity to have robust assessment tools to identify the most sustainable options. LCA is considered as one of the most promising tools to support such analyses, but there is still work to be done to e.g. integrate LCA with technological and economic forecasting approaches. The 7th European Framework Programme for Research (FP7) will therefore continue supporting the developments of as well as its increased use as a contribution towards a more sustainable society.

[1] For more information on FP7: http://cordis.europa.eu/fp7/home_en.html
[2] http://www.leidenuniv.nl/cml/ssp/publications/index.html
[3] http://www.leidenuniv.nl/interfac/cml/ssp/projects/chainet/
[4] http://www.pdt.enea.it/project.htm
[5] http://omniitox.imi.chalmers.se/OfficialMirror/
[6] http://www.calcasproject.net/
[7] e.g. ADSM, BIOFOAM, BIOMINE, CUTE, ECTOS, LICYMIN, LIRECAR, NEEDS, RAVEL, REPID, etc.
[8] DG Research held two workshops on this subject in April and June 2007. More information is available at http://circa.europa.eu/Public/irc/rtd/eesdwatkeact/library?l=/technologies_24-250407_2&vm=detailed&sb=Title
[9] http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=85